

REMARKS

In the Office Action mailed on February 19, 2010, all of pending claims 1, 3-6, 9-21 and 26-30 stand rejected.

Reconsideration of the pending claims in view of the following remarks is respectfully requested.

I. 35 U.S.C. 102 Rejections

Claims 1, 3-6, 9-15, 18-21 and 26-27 stand rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 98/47974 (“Heyenk”) as evidenced by U.S. 6,235,102 (“Parekh”).

Independent claims 1 and 20 recite a can (claim 1), or a method of making a can (claim 20), in which at least one body or end portion is coated with a coating composition that includes a blend of polyesters including between 60 and 90 weight percent of polyester resin having a glass transition temperature (“Tg”) less than about 25°C and between 10 and 40 weight percent of polyester resin having a Tg greater than 50°C. Heyenk does not disclose such a polyester blend.

In contrast, Heyenk exemplifies polymer blends that include a substantial majority of polymer having a Tg greater than 45°C (i.e., 45-50°C) and teaches that the polymer blends preferably include at least 50% of such polymer. Heyenk does not disclose a single polyester blend that includes either (i) a polyester having a Tg greater than 50°C or (ii) between 60 and 90 weight percent of polyester having a Tg less than 25°C. 37 weight percent is the highest concentration of polyester polymer having a Tg of less than 25°C disclosed in Heyenk.¹ Other than the polymer blends disclosed in the Examples Section, Heyenk does not teach any concentrations of “second polymer,” let alone any concentrations of second polymer in the form of polyester polymer having a Tg of less than 25°C. Moreover, Heyenk does not disclose a single polyester having a Tg greater than 50°C.²

Nonetheless the Office Action at page 5, asserts that the instant claims are anticipated by Heyenk for the following reasons:

¹ See Applicants’ Response “B” which includes a table on page 8 showing the Tg’s and weight percents of the polyesters included in the coating compositions of the Heyenk worked examples.

² All of the polyester materials disclosed in Heyenk have a Tg of 50°C or less. Heyenk does not teach any materials or methods for making a polyester having a Tg greater than 50°C that would be suitable for use in the Heyenk coating composition, nor does it teach any such commercially available polyester materials.

“Since Heyenk teaches that the polyester having a Tg of greater than 45°C is present in an amount of at least 25% of the composition and that the cross linker is present in an amount of 5-40% it would be reasonable to infer that in a composition comprising 25% polyester having a Tg of greater than 45°C and 5% crosslinker the balance, 70% would comprise polyester having a Tg of less than 10°C which anticipates a data point within the range of low Tg polyester percent weight claimed in claim 1. Alternatively, this interpretation of Heyenk provides a range of up to 70% of the second polyester which overlaps with the range claimed by applicant.”

It is respectfully submitted that the anticipation rejection is improper and contradicts Federal Circuit case law. The asserted anticipation rejection is one of anticipation by inherent disclosure due to the use of inference to find disclosure of unstated limitations in the Heyenk reference (e.g., the asserted concentration of a second polyester having a Tg less than 25°C). Under Federal Circuit case law, anticipation by inherent disclosure is appropriate only when the reference discloses prior art that must necessarily include the unstated limitation.³

As detailed in the block quotation above, the Office Action asserts that a skilled artisan considering the Heyenk reference would reasonably infer a composition that includes, among other things, a 70% concentration (or alternatively, a concentration range of up to 70%) of polyester polymer having a Tg less than 10°C, as well as 25% of a polyester having a Tg greater than 50°C. No such concentrations are disclosed in Heyenk and it is respectfully submitted that there is no basis for inferring that these features would necessarily be present in an embodiment of the Heyenk composition.

³ See, for example, *Atofina v. Great Lakes Chemical Corporation*, _____ (Fed. Cir., decided March 23, 2006) and *Transclean Corp v. Bridgewood Servs., Inc.*, 290 F.3d 1364, 1373 (Fed. Cir. 2002). In *Atofina*, the Federal Circuit determined that the district court erred in finding that a reference inherently disclosed the contact times between a catalyst and gas mixture of methylene chloride, anhydrous hydrogen fluoride and oxygen in the claimed method of synthesizing difluoromethane. The district court had found that although the reference did not mention the claimed contact times, it was anticipatory because the claimed contact times could be calculated based on information provided in the reference's examples (i.e., based on the diameter and lengths of reaction tubes and the flow rates). The Federal Circuit disagreed, finding that the reference did not anticipate the claims of the patent at issue “[b]ecause anticipation by inherent disclosure is appropriate only when the reference discloses prior art that must necessarily include the unstated limitation.” (Slip opinion at page 16). A copy of the Federal Circuit’s *Atofina* opinion is submitted herewith.

To arrive at the asserted anticipatory embodiment, the Office Action assumes at least the following (i-v): that the Heyenk composition (i) includes 25% of polyester polymer⁴ having (ii) a Tg greater than 50°C⁵ and further includes (iii) 5% of crosslinker⁶ and that (iv) the remaining balance of material in the composition would exclusively be polyester polymer and, moreover, (v) would exclusively be polyester polymer having a Tg of less than 10°C. There is no basis for asserting that Heyenk inherently discloses a blend that must necessarily include all of the above features (i)-(v). First, Heyenk does not disclose a single polyester having a Tg of greater than 50°C. Moreover, there is no basis for assuming that the composition would necessarily include the minimum disclosed amounts of both the Tg > 45°C polymer and the crosslinker. There is likewise no basis for inferring that polyester polymer having a Tg of less than 10°C would necessarily constitute the remainder of the composition. For example, Heyenk teaches that the blend can include polymers other than polyester polymers,⁷ that the blend can include more than two polymers and/or more than one polymer having a Tg greater than 45°C⁸, that the “second polymer” (i.e., the “low” Tg polymer) can have a Tg greater than about 25°C,⁹ and that the blend preferably includes more than 50% of a polymer having a Tg greater than 45°C.¹⁰ Accordingly, Heyenk does not disclose an embodiment that necessarily includes all of the features of independent claims 1 or 20. Heyenk, therefore, does not anticipate any of claims 1, 3-6, 9-15, 18-21 and 26-27.

II. 35 U.S.C. 103 Rejections

A. Heyenk

As discussed above, the Office Action at page 2, item 2, asserts that claims 1, 3-6, 9-15, 18-21, 26 and 27 are either anticipated by, or in the alternative obvious over, the Heyenk reference.

⁴ 25% of polyester polymer is the minimal concentration of Tg > 45°C polymer disclosed in Heyenk.

⁵ Since the highest Tg polyester disclosed in Heyenk has a Tg of 50°C, the Office Action assumes that the inferred embodiment includes a polyester having a Tg higher than that of any polyester materials disclosed in Heyenk.

⁶ 5% is the minimal concentration of crosslinker taught in Heyenk.

⁷ Heyenk discloses that polyesters and polyacrylates are examples of suitable polymers for use in the mixture. See page 2, lines 2-4.

⁸ Heyenk teaches that the resin system contains a mixture of at least two polymers wherein at least one polymer has a Tg greater than 45°C. See, e.g., the Abstract; page 2, lines 29 through page 3, line 2; and claim 1.

⁹ Heyenk discloses that the second polymer has a Tg generally lower than about 40°C, but can have a Tg of 40°C or more. See, e.g., page 2, lines 23-27.

¹⁰ See Heyenk at page 3, lines 21-23.

With regards to the alternate obviousness rejection, Heyenk teaches the desirability of blend that include a majority of Tg > 45°C polymer. The Office Action does not provide any reasoning as to what result(s) a skilled artisan would have sought to achieve in contradicting the preferred teachings of Heyenk¹¹ and including between 60 and 90 weight percent of polyester resin having a Tg less than about 25°C, let alone why a skilled artisan would have sought to achieve any such result(s) or have had a reasonable expectation of achieving any such result(s). Again, Heyenk desires a majority of the Tg > 45°C polymer. Moreover, contrary to the assertions of the Office Action, 37 weight percent is the highest amount of polyester having a Tg < 25°C disclosed in Heyenk and nowhere does Heyenk teach including more than 37 weight percent of polyester having Tg < 25°C. The Office Action further provides no reasoning as to why a skilled artisan would have sought to use such a concentration of Tg < 25°C polyester in combination with between 10 and 40 weight percent of polyester resin having a Tg greater than 50°C (i.e., a Tg higher than that of any polyester material disclosed in Heyenk).

Instead, the Office Action merely asserts that a *prima facie* case of obviousness exists because the claimed ranges overlap or lie inside ranges disclosed by Heyenk.¹² In support of this assertion, the Office action cites case law and generically asserts that the fact pattern is analogous to that of the cited case law. It is respectfully submitted that the instant fact pattern is not analogous to that of the cited case law.

In re Woodruff is one such representative case. In *In re Woodruff*, the claimed invention was directed to a gas mixture for preventing fungal growth on vegetables that included 0-20% carbon dioxide, 1-20% oxygen, 5-25% carbon monoxide, and the balance nitrogen gas. The prior art reference disclosed a gas mixture used to prevent degradation of vegetables that anticipated the claimed gas mixture with the exception that it disclosed using about 1-5% carbon monoxide. The court determined the overlapping or adjacent carbon monoxide concentration range did not render the claims patentable. The fact pattern of *In re Woodruff* is not analogous to that of the instant situation for a number of reasons. For example, Heyenk's highest disclosed concentration of Tg < 25°C polyester (i.e., 37 weight percent) is not overlapping or adjacent to the lower 60 weight percent end point of the claimed range claimed range, but is substantially

¹¹ For example, Heyenk teaches that the polymer blend preferably include more than 50% of the Tg > 45°C polymer (see page 3, lines 21-23) and all of the worked Examples of Heyenk include a substantial majority of the Tg > 45°C polymer.

lower. Moreover, unlike in *In re Woodruff*, Heyenk does not anticipate the claims with the exception of a single element. For example, Heyenk also does not disclose any polyester material having a Tg greater than 50°C.

It is similarly submitted that the fact pattern is not analogous to that of either Wertheim or Titanium Metals. Accordingly, the instant claims are not *prima facie* obvious over Heyenk in view of the cited case law. In view of the foregoing, it is respectfully submitted that Heyenk neither anticipates, nor renders obvious, any of the pending claims.

B. Heyenk in view of Parekh

Claims 16, 17 and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Heyenk in view of Parekh. The Office action acknowledges that Heyenk does not disclose the addition of an acrylate copolymer having glycidyl groups and looks to Parekh to overcome this deficiency in Heyenk. At page 9, the Office Action asserts the following basis for the asserted obviousness rejection:

“The motivation to combine the teachings of Parekh with the composition of Heyenk would have been to improve the corrosion barrier properties of the coating composition of Heyenk. The composition of Parekh inhibits the corrosion of metal by simply admixing the acrylate copolymer with pendant glycidyl groups with polyester. It follows that the addition of acrylate copolymer with pendant glycidyl groups would therefore improve the corrosion barrier properties of other polyesters.”

Applicants respectfully traverse the rejection. First, there is no indication that the Heyenk coating has any corrosion problems. A skilled artisan would therefore have had no reason to look to the Parekh reference in the first place to improve corrosion resistance.

Moreover, even *arguendo* if a skilled artisan were to look to the Parekh reference, they would have had no reason to include the acrylate copolymer of Parekh in the Heyenk coating composition. First, Parekh teaches a coating composition that includes a minimum of 50%, by weight nonvolatile material, of acrylate copolymer having pendant glycidyl groups.¹³

¹² See item 34 of the Office Action on page 14.

¹³ See, e.g., the Parekh Summary at col. 5, lines 51-60 where it teaches that the composition includes 50 to 90% of acrylate copolymer by weight nonvolatile material.

It is purely speculative that including such a large amount of acrylate copolymer in the Heyenk coating composition would improve the corrosion resistance of the Heyenk coating composition. The addition of such a large amount of acrylate copolymer may in fact degrade one or more of the Heyenk coating properties. Moreover, Parekh teaches that it is important that the polyester be terminated on each end with carboxylic acid groups.¹⁴ The Office Action, however, asserts that a skilled artisan considering the Heyenk reference “would have immediately envisaged that it would be desirable to have the least amount of free acid in a polymer that is intended to be in contact with consumable substances”¹⁵, which would further discourage a skilled artisan from making the proposed combination.

Even *arguendo* if the proposed combination were to be made, the resulting coating composition would still not include all of the features of the claimed composition.¹⁶ For example, neither reference discloses a composition including a blend of two or more polyesters having between 60 and 90 weight percent of polyester resin having a Tg less than about 25°C.

It is accordingly submitted that claims 16, 17, 29 and 30 are allowable over Heyenk and Parekh.

C. Heyenk in view of Parekh

According to item 18 on page 9 of the Office Action, claim 29 stands rejected as being obvious over Heyenk in view of Parekh. Applicants presume Parekh was cited in error with regards to claim 29. If this assumption is incorrect, clarification of the rejection with regards to Parekh is respectfully submitted.

As discussed above with regards to the rejection of independent claim 1, Heyenk does not disclose, nor render obvious, a composition including a blend of two or more polyesters having between 60 and 90 weight percent of polyester resin having a Tg less than about 25°C and between about 10 and 40 weight percent polyester resin having a Tg greater than 50°C. Accordingly, claim 29, which depends from claim 1, is similarly patentable over Heyenk.

¹⁴At col. 10, lines 12-17, Parekh teaches that “it is important that the polyester is terminated at each end with carboxylic acid groups” so that “terminal carboxylic acid groups of the polyester . . . are available to react with the oxirane ring of the pendant glycidyl groups of the copolymer, and thereby provide a crosslinked acrylate coating.”

¹⁵ See, e.g., page 6 of the Office Action.

¹⁶ Applicants traverse the assertion that a skilled artisan would have been motivated to make the proposed combination.

D. Heyenk in view of Parekh and Maska

Claim 28 stands rejected as being obvious over Heyenk as evidenced by Parekh and U.S. 5,252,669 ("Maska"). The Office action acknowledges that the primary Heyenk reference is silent regarding the use of a phenoplast for cross-linking and looks to Maska to overcome this deficiency. It is unclear for what purpose the Office Action is citing Parekh with regards to claim 28. Even *arguendo* if the proposed combination were made, the resulting coating composition would not include all of the features of independent claim 1 from which claim 28 depends.¹⁷ As discussed above, neither Heyenk nor Parekh discloses a composition including a blend of two or more polyesters having between 60 and 90 weight percent of polyester resin having a Tg less than about 25°C and between about 10 and 40 weight percent polyester resin having a Tg greater than 50°C. Maska does not overcome these deficiencies in Heyenk and Parekh. It is accordingly submitted that claim 28 is allowable over Heyenk, Parekh, and Maska.

¹⁷ Applicants traverse the assertion that a skilled artisan would have been motivated to make the proposed combination.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that all of pending claims 1, 3-6, 9-21, and 26-30 are in condition for allowance. A notice to that effect is respectfully requested. The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 50-2070.

Respectfully submitted,

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